AVERAGE MEAN (MIXTURE) ANALYSIS

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1.) Find the average of first 40 natural numbers.

a.) 20.5 b.) 18 c.) 19.5 d.) 19

Sum of first n natural numbers $= (n(n+1))/2$

$n = 40 \Rightarrow 40(40+1)/2 \Rightarrow 40 \times 41/2 = 820$

AVERAGE $= \frac{820}{40} = 20.5$

2.) Find the average of all the numbers between 6 and 34 which are divisible by 5.

$a = 10, \; n = 5, \; L = 30$

$S_n = \frac{n}{2}[a + L]$

$S_n = \frac{5}{2}[10 + 30]$

$S_n = \frac{5}{2}[40]$

$S_n = 100$

Average $= \frac{S_n}{n} = \frac{100}{5} = 20$

a.) 18
b.) 20
c.) 24
d.) 30

3.) The Average of 2, 7, 6 and x is 5, and the average of 18, 1, 6, x and y is 10. What is value of y?

a.) 5 b.) 10 c.) 20 d.) 30

To Find x

$\frac{2+7+6+x}{4} = 5$

$15 + x = 20$

$x = 5$

To Find y

$\frac{18+1+6+5+y}{5} = 10$

$30 + y = 50$

$y = 20$

4.) The average of 7 consecutive number is 20. The largest of these number is

a.) 20 b.) 22 c.) 23 d.) 24

17 18 19 20 21 22 23

5.) Nine person went to a hotel for taking their meals. Eight of them spent Rs. 12 each on their meals and the ninth spent Rs. 8 more than the average expenditure of all the nine. What was the total money spent by them?

a.) 117 b.) 180 c.) 150 d.) 200

Avg $= \frac{\text{Sum of Money}}{\text{No. of person}} \Rightarrow y = \frac{96 + x}{9}$

x = 9th person $y \rightarrow$ Average

$x = y + 8 \rightarrow$ from question

$y = \frac{96 + y + 8}{9}$

$9y = 96 + 8 + y$

$8y = 104$

$y = 13$

TOTAL Money Spent $96 + 13 + 8 = 117$

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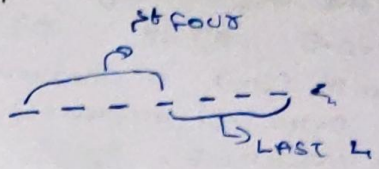
6.) In Seven given numbers, the average of first four number is 4 and that of the last 4 number is also 4. If the average of these 7 numbers is 3, the fourth number is

a.) 3 b.) 4 c.) 7 d.) 11



$4 \times 4 \Rightarrow 16 \rightarrow$ 1st four numbers

$4 \times 4 \Rightarrow 16 \rightarrow$ last four numbers

whole Avg $= 7 \times 3 = 21$

$16 + 16 - 21 \Rightarrow 32 - 21 = 11$

7.) The average weight of 29 students is 28kg. By the admission of a new student the average weight reduced to 27.8 kg. what is the weight of the new student

a.) 22 kg b.) 21.6 kg c.) 22.4kg d.) 21 kg

$29 \times 28 = 812 \rightarrow$ Initial

$30 \times 27.8 = 834 \rightarrow$ After new one added

$834 - 812 = 22$ kg $\rightarrow$ new one's weight.

8.) The Average age of a committee of 8 members is 40 years. A member aged 55 years retired and his place was taken by another member aged 39 years. The average of present comitte is.

a.) 39 years b.) 38 years c.) 36 years d.) 35 years.

$8 \times 40 = 320 \rightarrow$ Initial

Remove 55

$320 - 55 = 265$

Add 39

$265 + 39 = 304$

New Avg $= \frac{304}{8} = 38$

9.) Eight persons participated in a shooting competition. The top score in the competition is 85 points. Had the top ~~score in the~~ been ~~Competition is 85 points. Had the top scored score~~ 92 points instead of 85 points, the average score could have been 84. Find the number of points actually scored in the competition

a.) 645 b.) 655 c.) 665 d.) 636.

$\frac{92 + 7x}{8} = 84$

$92 + 7x = 672$

$7x = 672 - 92 \Rightarrow 7x = 580$

$580 + 85 = 665.$

10) Find the average of all even numbers upto 75

a) 35 b) 36, c) 38 d) 34

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$a = 2, \quad d = 2, \quad n = \frac{74}{2} = 37$

$$S_n = \frac{n}{2}[2a + (n-1)d]$$

$$S_n = \frac{37}{2}[2(2) + (37-1)2]$$

$$S_n = \frac{37}{2}[4 + 72]$$

$$S_n = \frac{37 \times 76}{2} = 1406$$

$$\text{AVG} = \frac{S_n}{n} = \frac{1406}{37} = 38$$